

**What is claimed is:**

1. An oil soluble lubricant additive package comprising:  
at least one alkylamine salt of a dialkylmonothiophosphate; and  
at least one detergent, wherein the weight ratio of said alkylamine salt of a dialkylmonothiophosphate to said detergent is from about 0.05:1 to about 3:1.
2. The oil soluble lubricant additive package as in claim 1, wherein said oil soluble lubricant additive package has a sulfur content and a phosphorus content sufficient to yield a lubricating oil having a sulfur content less than about 0.3 wt% and a phosphorus content of less than about 0.11 wt%.
3. The oil soluble lubricating additive package as in claim 1, wherein at least one of said at least one detergent is selected from the group consisting of calcium sulfonate, magnesium sulfonate, sodium sulfonate, non-sulfurized Mannich phenates, sulfurized phenates, salicylates, overbased saligenin, overbased carboxylic acids, and combinations thereof.
4. A lubricating oil comprising the oil soluble lubricant additive package of claim 1, wherein said lubricating oil has a total base number of less than about 10, and at least one property selected from the group consisting of: a sulfur content less than about 0.3 wt%, a phosphorus content of less than about 0.11 wt%, and an ash content less than about 1.2 wt%.
5. A machine lubricated by the lubricating oil of claim 4.

6. The machine lubricated by the lubricating oil of claim 5, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.
7. A vehicle comprising the oil soluble lubricant additive package of claim 1.
8. A method for lubricating an engine crankcase, said method comprising the step of:
  - at least partially filling said crankcase with a lubricant comprising the oil soluble lubricant additive package of claim 1.
9. A method for lubricating moving parts of a machine, said method comprising the step of:
  - contacting at least one said moving part with a lubricant comprising the oil soluble lubricant additive package as in claim 1.
10. The method for lubricating moving parts of a machine as in claim 9, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.
11. An oil soluble lubricant additive package comprising:
  - at least one alkylamine salt of a dialkylmonothiophosphate; and
  - at least one dispersant, wherein the weight ratio of said alkylamine salt of a dialkylmonothiophosphate to said dispersant is from about 1:4 to about 1:20.

12. The oil soluble lubricant additive package as in claim 11, wherein said oil soluble lubricant additive package has a sulfur content and a phosphorus content sufficient to yield a lubricating oil having a sulfur content less than about 0.3 wt% and a phosphorus content of less than about 0.11 wt%.
13. The oil soluble lubricant additive package as in claim 11, wherein said at least one dispersant has a molecular weight of from about 1,000 to about 20,000.
14. The oil soluble lubricant additive package as in claim 11, wherein said at least one dispersant is a maleic anhydride functionalized polyisobutylene polymer that has been reacted with a polyamine.
15. The oil soluble lubricant additive package as in claim 11, wherein said at least one dispersant is a product of a Mannich reaction.
16. The oil soluble lubricant additive package as in claim 11, wherein said at least one dispersant is an ethylene-propylene type dispersant.
17. The oil soluble lubricant additive package as in claim 11, additionally comprising at least one component selected from the group consisting of: viscosity index improvers and pour point depressants.
18. A lubricating oil comprising the oil soluble lubricant additive package of claim 11, wherein said lubricating oil has a total base number of less than about 10, and at

least one property selected from the group consisting of: a sulfur content less than about 0.3 wt%, a phosphorus content of less than about 0.11 wt%, and an ash content less than about 1.2 wt%.

19. A machine lubricated by the lubricating oil of claim 11.

20. The machine lubricated by the lubricating oil of claim 19, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.

21. A vehicle comprising the oil soluble lubricant additive package of claim 11.

22. A method for lubricating an engine crankcase, said method comprising the step of:

at least partially filling said crankcase with a lubricant comprising the oil soluble lubricant additive package of claim 11.

23. A method for lubricating moving parts of a machine, said method comprising the step of:

contacting at least one said moving part with a lubricant comprising the oil soluble lubricant additive package of claim 11.

24. The method for lubricating moving parts of a machine as in claim 23, wherein said machine is selected from the group consisting of: gas engines, diesel engines,

turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.

25. An oil soluble lubricating additive package comprising:

at least one alkylamine salt of a dialkylmonothiophosphate; and

at least one antioxidant, wherein the weight ratio of alkylamine salt of a dialkylmonothiophosphate to antioxidant is from about 10:1 to about 1:5.

26. The oil soluble lubricant additive package as in claim 25, wherein said oil soluble lubricant additive package has a sulfur content and a phosphorus content sufficient to yield a lubricating oil having a sulfur content less than about 0.3 wt% and a phosphorus content of less than about 0.11 wt%.

27. The oil soluble lubricant additive package as in claim 25 wherein at least one of said at least one antioxidant is selected from the group consisting of: alkylated diphenylamines, sulfurized olefins, phenols, hindered phenols, and sulfurized phenols.

28. A lubricating oil comprising the oil soluble lubricant additive package of claim 25, wherein said lubricating oil has a total base number of less than about 10, and at least one property selected from the group consisting of: a sulfur content less than about 0.3 wt%, a phosphorus content of less than about 0.11 wt%, and an ash content less than about 1.2 wt%.

29. A machine lubricated by the lubricating oil of claim 28.

30. The machine of claim 29, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.

31. A vehicle comprising the oil soluble lubricant additive package of claim 25.

32. A method for lubricating an engine crankcase, said method comprising the step of:

at least partially filling said crankcase with a lubricant comprising the oil soluble lubricant additive package of claim 25.

33. A method for lubricating moving parts of a machine, said method comprising the step of:

contacting at least one said moving part with a lubricant comprising the oil soluble lubricant additive package as in claim 25.

34. The method of claim 33, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.

35. An oil soluble lubricant additive package comprising:

at least one alkylamine salt of a dialkylmonothiophosphate; and

at least one component selected from the group consisting of: detergents, dispersants, antioxidants, friction modifiers, viscosity index improvers, and pour point depressants.

36. The oil soluble lubricant additive package as in claim 35, wherein said oil soluble lubricant additive package has at least one property selected from the group consisting of: a sulfur content less than about 3 wt% and a phosphorus content less than about 1.2 wt%.

37. The oil soluble lubricant additive package as in claim 35 wherein said oil soluble lubricant additive package is essentially free of sulfurized phenate.

38. A lubricating oil comprising the oil soluble lubricant additive package of claim 35, wherein said lubricating oil has a total base number of less than about 10, and at least one property selected from the group consisting of: a sulfur content less than about 0.3 wt%, a phosphorus content of less than about 0.11 wt%, and an ash content less than about 1.2 wt%.

39. A machine lubricated by the lubricating oil of claim 38.

40. The machine lubricated by the lubricating oil of claim 38, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.

41. A vehicle comprising the oil soluble lubricating additive package of claim 35.
42. A method for lubricating an engine crankcase, said method comprising the step of:
- at least partially filling said crankcase with a lubricant comprising the oil soluble lubricant additive package of claim 35.
43. A method for lubricating moving parts of a machine, said method comprising the step of:
- contacting at least one said moving part with a lubricant comprising the oil soluble lubricant additive package as in claim 35.
44. The method for lubricating moving parts of a machine as in claim 43, wherein said machine is selected from the group consisting of: gas engines, diesel engines, turbine engines, automatic transmissions, manual transmissions, hypoid axles, and gear boxes.
45. A method of achieving a low sulfur, low ash, and low phosphate oil formulation, said method comprising:
- providing an oil soluble lubricant additive package, said oil soluble lubricant additive package comprising an alkylamine salt of a dialkylmonothiophosphate; and
- admixing said oil soluble lubricant additive package with at least a base oil so as to form a lubricating oil having a total base number of less than about 10, and at least one property selected from the group consisting of: a sulfur



content less than about 0.3 wt%, a phosphorus content of less than about 0.11 wt%, and an ash content less than about 1.2 wt%.

46. The method of claim 45, wherein said lubricating oil additionally comprises at least one additive selected from the group consisting of: detergents, dispersants, antioxidants, friction modifiers, viscosity index improvers, and pour point depressants.